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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,810	10/11/2005	Johannes Joseph Hubertina Barbara Schleipen	NL 030377	5522
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CHOW, LIXI				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/552,810

Applicant(s)SCHLEIPEN, JOHANNES JOSEPH
HUBERTINA BA**Examiner**

Lixi Chow

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Drawings

1. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1, 7, 8, 10, 12 and 13 are objected to because of the following informalities: the numbers in parentheses in these claims should be omitted; and the word "characterised" in claims 1 and 13 should be --characterized-- . Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-6, 8-10, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Leheureau et al. (US 5,168,485; hereafter Leheureau).

Regarding claim 1:

Lehureau discloses an optical scanning device (see Fig. 2) for scanning an optical record carrier (Fig. 2, element 5) comprising an information layer, the device comprising:

a radiation source (Fig. 2, element 1) for emitting an incident radiation beam (F1);

a detection system comprising an information signal detector (elements 6 and 7) arranged to receive radiation reflected from the information layer and to detect an information signal therein;

an optical system (elements 2-4) for focusing the incident radiation beam to a spot on in the record carrier, and for directing the reflected radiation beam onto the information signal detector; and

an optical wavefront modifier (element 2) arranged in the path of the incident radiation beam and the reflected radiation beam, wherein the incident radiation beam has a first wavefront shape at a given location prior to its incidence on the optical wavefront modifier and the reflected radiation beam has a second wavefront shape at the said given location after passing through the optical wavefront modifier, characterized in that the optical wavefront modifier is arranged to perform wavefront modification on the incident and reflected radiation beams such that the second wavefront shape is substantially different to the first wavefront shape (see Fig. 2 and col. 3, lines 36-45).

Regarding claim 3:

Lehureau discloses a device according to claim 1, wherein the optical wavefront modifier is arranged to provide a focus servo wavefront modification which is arranged to generate a focus servo signal at the detection system (see col. 2, lines 1-6).

Regarding claim 4:

Lehureau discloses a device according to claim 3, wherein the optical wavefront modifier is arranged to provide an astigmatic wavefront modification (see col. 2, lines 10-12).

Regarding claim 5:

Lehureau discloses a device according to claim 3, wherein the optical wavefront modifier is arranged to split the reflected radiation beam into two sub beams, thereby providing a beam splitting wavefront modification (see Fig. 2; beams F8 and F'8).

Regarding claim 6:

Lehureau discloses a device according to claim 1, wherein the optical wavefront modifier is arranged to provide a focusing wavefront modification which is arranged to at least partly focus the reflected radiation beam onto the detection system (see Fig. 2 and col. 2, lines 3-6).

Regarding 8:

Lehureau discloses a device according to claim 1, wherein the optical wavefront modifier comprises a birefringent part (see Fig. 3, element 24) arranged to vary the optical path of an incoming radiation beam in dependence on the polarization of the incoming radiation beam (see col. 4, lines 1-8).

Regarding claim 9:

Lehureau discloses a device according to claim 8, wherein the index of refraction of the birefringent part varies in accordance with the polarization of radiation passing therethrough, and is arranged such that the optical wavefront modifier applies zero modification to the incident radiation beam (see col. 3, lines 36-45).

Regarding claim 10:

Lehureau discloses a device according to claim 8, wherein the birefringent part comprises a liquid crystal material enclosed between optically homogeneous plates (see col. 3, lines 62-68).

Regarding claim 12:

Lehureau discloses a device according to claim 1, including a polarization-altering element (Fig. 2, element 3) located between the optical wavefront modifier and the optical record carrier, in the path of the incident and reflected radiation beams.

Regarding claim 13:

Claim 13 recites similar limitations as in claims 1; hence, claim 13 is being rejected under the same reasons set forth in claim 1.

5. Claims 1-3, 5, 6, 11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kotaini (US 6,172,350).

Regarding claim 1:

Kotani discloses an optical scanning device (see Fig. 1) for scanning an optical record carrier (Fig. 1, element 102) comprising an information layer, the device comprising:

a radiation source (Fig. 1, element 103) for emitting an incident radiation beam ;

a detection system (Fig. 1, elements 107, 108, 110 and 130) comprising an information signal detector (Fig. 1, elements 107 and 108) arranged to receive radiation reflected from the information layer and to detect an information signal therein;

an optical system (Fig. 1, elements 104-106) for focusing the incident radiation beam to a spot on in the record carrier, and for directing the reflected radiation beam onto the information signal detector; and

an optical wavefront modifier (Fig. 1, element 106) arranged in the path of the incident radiation beam and the reflected radiation beam, wherein the incident radiation beam has a first wavefront shape at a given location prior to its incidence on the optical wavefront modifier and the reflected radiation beam has a second wavefront shape at the said given location after passing through the optical wavefront modifier (see the path of ongoing beam and return beam in Fig. 1),

characterized in that the optical wavefront modifier is arranged to perform wavefront modification on the incident and reflected radiation beams such that the second wavefront shape is substantially different to the first wavefront shape (see Fig. 1).

Regarding claim 2:

Kotani discloses a device according to claim 1, wherein the optical path length between the information layer and the detection system is less than the optical path length between the radiation source and the information layer (see Fig. 1; the distance between the photodetectors and the medium is less than the distance between the light source and the medium).

Regarding claim 3:

Kotani discloses a device according to claim 1, wherein the optical wavefront modifier is arranged to provide a focus servo wavefront modification which is arranged to generate a focus servo signal at the detection system (see Fig. 1, element 110).

Regarding claim 5:

Kotani discloses a device according to claim 3, wherein the optical wavefront modifier is arranged to split the reflected radiation beam into two sub beams, thereby providing a beam splitting wavefront modification (see Fig. 1, the return beam is being split into two beams).

Regarding claim 6:

Kotani discloses a device according to claim 1, wherein the optical wavefront modifier is arranged to provide a focusing wavefront modification which is arranged to at least partly focus the reflected radiation beam onto the detection system (see Fig. 1).

Regarding claim 11:

Kotani discloses a device according to claim 1, wherein the optical wavefront modifier is positioned in a substantially collimated portion of the incident radiation beam (see the position of elements 104 and 106).

Regarding claim 13:

Claim 13 recites similar limitations as in claims 1; hence, claim 13 is being rejected under the same reasons set forth in claim 1.

6. Claims 1, 2, 7, 11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohuchida et al. (US 5,684,779; hereafter Ohuchida).

Regarding claim 1:

Ohuchida discloses an optical scanning device (see Fig. 6) for scanning an optical record carrier (Fig. 5, element 6) comprising an information layer, the device comprising:

a radiation source (Fig. 6, element 1) for emitting an incident radiation beam;

a detection system comprising an information signal detector (Fig. 6, element 7) arranged to receive radiation reflected from the information layer and to detect an information signal therein;

an optical system (Fig. 6, elements 13, 14 and 19) for focusing the incident radiation beam to a spot on in the record carrier, and for directing the reflected radiation beam onto the information signal detector; and

an optical wavefront modifier (Fig. 6, element 19 or Fig. 8A, element 21) arranged in the path of the incident radiation beam and the reflected radiation beam, wherein the incident radiation beam has a first wavefront shape at a given location prior to its incidence on the optical wavefront modifier and the reflected radiation beam has a second wavefront shape at the said given location after passing through the optical wavefront modifier (the diffracted return light corresponds to the light having a second wavefront shape),

characterized in that the optical wavefront modifier is arranged to perform wavefront modification on the incident and reflected radiation beams such that the second wavefront shape is substantially different to the first wavefront shape (see Fig. 6).

Regarding claim 2:

Ohuchida discloses a device according to claim 1, wherein the optical path length between the information layer and the detection system is less than the optical path length between the radiation source and the information layer (see Fig. 6).

Regarding claim 7:

Ohuchida discloses a device a device according to claim 6, wherein the optical wavefront modifier includes a double wedge structure having a profile along at least part of a surface thereof (see Fig. 8A, element 21; the gratings 22a and 22b are being double wedged).

Regarding claim 11:

Ohuchida discloses a device according to claim 1, wherein the optical wavefront modifier is positioned in a substantially collimated portion of the incident radiation beam (see Fig. 6; the lens before element 19 is a collimate lens).

Regarding claim 13:

Claim 13 recites similar limitations as in claims 1; hence, claim 13 is being rejected under the same reasons set forth in claim 1.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takahashi et al. (US 5,694,385), Hoshi et al. (US 4,733,065) and Yoshida (US 2001/0003488) are cited to show related art references that teach an optical pickup apparatus having a wavefront modifier.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lixi Chow whose telephone number is 571-272-7571. The examiner can normally be reached on Mon-Fri, 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LC 5/14/08

/Wayne R. Young/
Supervisory Patent Examiner, Art Unit 2627